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## REPORT

CD NO.

50X1-HUM

DATE OF INFORMATION 1950

DATE DIST. 21 Nov 1950

NO. OF PAGES 2

SUPPLEMENT TO  
REPORT NO.

SUPPLEMENT TO  
REPORT NO.

SUPPLEMENT TO  
REPORT NO.

THIS IS UNEVALUATED INFORMATION

SOURCE Ugo1', No 9, 1950.

## LONG MINE FACES INCREASE COAL OUTPUT IN MOSCOW BASIN

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The choice of the best length for the mine face is an important factor in the further increase of the Moscow Basin coal output. The average length of the basin mine faces was 18 meters in 1935, 38 meters in 1938, and 45 meters in 1941. From 1948 on, the length of the mine face continued to increase with the introduction of scraper conveyers which were able to cope with a mine face 100 meters long. For the Tulaugol' Combine the average length was 45.2 meters in 1948, 47 meters in 1949, and 50 meters at present. At the same time the combine has some mines faces only 30 meters long and some as much as 100 meters long. In 1950 the Tulaugol' Combine showed the following distribution of mines faces according to different lengths (in percent of the total number):

30-40 meters	23.0
40-50 "	44.0
50-60 "	19.0
60-70 "	7.0
70-80 "	3.0
80 meters and more	2.5

To determine the best length for the mine face, certain geological conditions of the deposit must be taken into consideration: the watery condition of the side rock, the stability of roof and floor, and the thickness of the coal seam. It has been found difficult and inexpedient to work long mine faces when the side rock is very watery. If the roof of the seam is unstable, the likelihood of cave-ins is greater at long mine faces and when faults occur in the floor of the seam at long mine faces, the operation of the conveyers is impeded and propping the mine face is more complicated. Long mine faces have also been found impractical in seams up to approximately 1.7 meters thick.

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An analysis of the work (see following table) of the Tulaugol' Combine mine faces for the 9 months from June 1949 to March 1950 indicates that a considerable improvement was made by the lengthened mine faces.

	<u>Length of Mine Face (meters)</u>					
	<u>30-40</u>	<u>40-50</u>	<u>50-60</u>	<u>60-70</u>	<u>70-80</u>	<u>80-and more</u>
Av thickness of seam (m)	2.20	2.24	2.40	2.37	2.42	2.56
Av daily coal output (t)	106	118	132	166	169	187
Monthly advance of mine faces (m)	30	27	23	26	22	21
Labor productivity per worker per section per shift (t)	3.06	3.21	3.32	3.65	3.40	3.75
Labor productivity per cutter and loader per shift (t)	8.90	9.17	9.20	10.30	10.20	11.20
Amt removed from 1 linear meter of mine face (t)	3.45	2.62	2.39	2.55	2.25	2.20

The above data indicate that the daily coal output is 76 percent higher at mine faces more than 80 meters long than at those 30-40 meters long and labor productivity is 22 percent higher.

Mine Faces 42-44 of the Mine No 4 of the Skuratovugol' Trust gave a very fine performance in April 1950 and their results are shown in the following table:

Length of both faces (m)	196
Thickness of seam (meters)	2.53
Daily coal output from both faces (t)	760
Mo advance of each face (m)	37
Amt removed from 1 linear meter of face (t)	3.8
Labor productivity per worker per section per shift (t)	4.0
Labor productivity per cutter and loader per section per shift (t)	12.8
Number of cutters and loaders per 100 linear meters of face	31

Experience has shown that lengthening the Moscow Basin mine faces will play an important part in increasing the coal output and the labor productivity in that area. In each instance, however, the geological conditions must be taken into consideration. Where difficult conditions are encountered, it is inadvisable to increase the length of the mine face to more than 50 meters, since a longer mine face will, under these conditions, result in a lower coal output and reduced labor productivity. Where geological conditions are favorable, it is expedient to increase the length of the mine face up to 60-80 meters, and in exceptionally favorable circumstances up to 100 meters.

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